

ME 115(a): Homework #6

(Due Friday March. 11, 2016)

Problem 1: (20 points) Consider the Stanford Manipulator that you analyzed in Problem Set 5.

- (10 Points) Derive the Spatial Jacobian for this manipulator. You need only consider the first 3 joints. But compute the full 6×3 spatial Jacobian matrix.
- (10 Points) Derive the hybrid Jacobian matrix for the first 3 joints. You need only determine the 3×3 matrix which describes the relationship between the joint velocities and the velocity of the tool frame origin.